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ABSTRACT

All available research in which a therapeutic expectancy was directly assessed and than related to a measure of outcome was reviewed. The review revealed that across all studies both client and therapist expectancies appear related to improvement; however, in the better-designed research a differential pattern emerges in which client expectancy no longer demonstrates a systematic correlation, and therapist expectancy retains a reliable, if modest, relationship with the success of therapy. (Author)

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# Therapeutic Expectancies and Treatment Outcome: A Quantitative Review

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# Therapeutic Expectancies and Treatment Outcome: A Quantitative Review

For some time theorists such as Frank (1959, 1971, 1973), Goldstein (1962, 1966), and others (e.g., Bednar, 1970) have stressed the role of expectancies in counseling and therapy situations. For instance, they point out that a client's belief concerning the effectiveness of treatment may be an important factor in subsequent improvement, paralleling similar placebo phenomena in medical settings (e.g., see Shapiro, 1971). These theorists also argue that counselor or therapist expectancies can influence treatment outcome; here the analogy is to the self-fulfilling prophecies that Rosenthal (1969, 1973, 1976) has documented in both laboratory and field situations.

Any causal effect of client or therapist expectancies would obviously have significant implications for our understanding of the counseling process. However, before asserting such causal relationships, we first need to determine whether in therapy situations there is any correlation between the relevant variables at all. Unfortunately, existing reviews of the literature are less than satisfactory in fully answering this question. For example, general reviews of psychotherapy research (e.g., Luborsky, Auerbach, Chandler, Cohen, & Bachrach, 1971; Meltzoff & Kornreich, 1970; Strupp & Bergin, 1969b) list only a handful of studies relating to either client or therapist expectancies, and these

studies do not seem to present a consistent pattern. Although a more focused review by Wilkins (1973a, 1973b) suggests that client expectancy correlations only appear in methodologically less sophisticated studies, no comparable review exists for therapist expectancies.

The present investigation was therefore designed to provide a more complete analysis of the research on client and therapist expectancies in counseling situations. This review can be differentiated from previous efforts in two respects. First, it includes a number of studies not listed in any earlier review. Second, and more importantly, the present analysis utilizes quantitative techniques of review that have recently been highlighted by a number of psychologists (e.g., see Glass, 1976; Rosenthal, 1978; Smith & Glass, 1977; Glass, Note 1). With these techniques the findings of the original research are treated as raw observations and their reported effect sizes and probability estimates are combined in an overall "meta-analysis" (Glass, 1976).. Such an approach is especially useful in an area, such as the present one, where there are conflicting findings. As the following review illustrates, one can code various features of the different studies and then examine their effect on the reported results.

## Method

Included in the review was all available research in which a therapeutic expectancy was directly assessed from either client or therapist and was then related to a measure of outcome. Studies were

collected from an annotated bibliography of psychotherapy research (Strupp & Bergin, 1969a), from Psychological Abstracts, 1950 to 1977, and from previous reviews of the therapy and counseling literature. Excluded from consideration, though, were analogue studies in which the "clients" were volunteer subjects, typically college sophomores recruited from a psychology class. Also excluded were studies in which expectancy was experimentally manipulated but not measured. Both of these exclusions were to some extent a means of limiting the review to manageable proportions. As an alternative, these studies could have been included and then compared to other research (cf. Glass, 1976; Smith & Glass, 1977; Glass, Note 1). However, the two exclusions were not random choices: As some writers (e.g., Cooper, Furst, & Bridger, 1969; Bernstein & Paul, 1971; also see Fiske, 1977) have noted, the extrapolation from undergraduate subjects to actual patients in distress may not be particularly valid. Moreover, in a clinic setting brief experimental interventions are often not effective in altering therapeutic expectancies (e.g., see Imber, Pande, Frank, Hoehn-Saric, Stone, & Wargo, 1970).

Once the relevant research had been collected, the results were transformed to a common metric to allow comparisons across studies. Since most of the studies reported their findings in correlational terms, the Pearson correlation coefficient was chosen as the standard measure. This statistic provides a convenient gauge of effect size (see Cohen, 1969), with the square of the coefficient indicating the proportion of

explained variance. Results reported in terms other than a Pearson coefficient were converted to this statistic, using standard transformations when available (e.g., $t$ and $x^2$ convert directly to an $r$) and ad hoc procedures when not (e.g., finding the $r$ having the reported $p$-value).

Ordinarily a Pearson correlation can be directly transformed to an exact probability level (Hays, 1963, pp. 530-533). But in the present case several of the effect size estimates were not true Pearson coefficients; therefore, they could not legitimately be used for testing statistical significance. To circumvent this problem a standard normal deviate associated with the reported results was coded in addition to the correlational effect size.

In addition to deriving effect sizes and probability levels, the studies were coded for design features that might account for differences in their findings. Two of these variables were the type of clients examined (hospitalized inpatients or clinic outpatients) and the average length of treatment assessed. Another feature that differentiated the studies was the temporal nature of the measurement procedure. Some studies assessed estimates of initial expectancy at the same time that final judgments of outcome were being solicited; in contrast, other studies assessed expectancy at one point in time and outcome at a later point. Obviously, findings of time-lagged correlations between expectancy and subsequent outcome would be of greater significance in developing causal interpretations of such relationships. A final moderating variable was whether the source of the outcome measure was the same as

the source of the expectancy rating. Wilkins (1973a, 1973b) has noted that studies reporting significant relationships between client expectancies and outcome have generally measured outcome through the client's self-report; null result studies have generally employed outcome measures drawn from someone other than the client. More generally stated, this observation suggests that when the same source provides both the expectancy and outcome ratings, the relationship is inflated by common method variance (cf. Campbell & Fiske, 1959). To check on this possibility, studies where the source of expectancy and outcome was the same were distinguished from studies where the sources of expectancy and outcome differed.

If the number of relevant studies had been large enough, the various differentiating features of the research could have been treated as independent variables in multiple regression analyses (e.g., see Glass, 1976; Smith & Glass, 1977; Glass, Note 1). Given the moderate number of studies in each of the following reviews, though, the design features could only be used for classificatory purposes; that is, effect sizes and probability levels were estimated within different categories of the studies. Since there was considerable variability in sample size, estimates from the different studies were combined by means of weighting procedures. For the correlational effect size estimates the usual procedure for averaging independent coefficients, weighted by the inverse of their sampling variance, was employed (see McNemar, 1962, p. 140). For the standard normal deviates associated with the results

of the studies the weighting was by degrees of freedom, using the technique suggested by Mosteller and Bush (1954; also see Rosenthal, 1978).

## Results and Discussion

Table 1 presents the results of the quantitative review for the client expectancy research. As can be seen from the first row of the table, the 15 relevant studies suggest an overall effect size of .13--that is, client expectancy accounts for approximately 2% of the variance in treatment outcome. Although this effect is small, it is based on a large number of degrees of freedom; thus, the associated standard normal deviate represents a high level of statistical significance.

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Insert Table 1

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However, as the remainder of the table indicates, this reported correlation between client expectancy and treatment outcome fluctuates considerably according to characteristics of the studies. For example, the average effect size nearly doubles for outpatient studies but is virtually zero for inpatient studies. This difference presents some intriguing possibilities: Hospitalized inpatients might be more confused and therefore less realistic about their therapeutic prospects. Alternately, expectancies may have less of an impact on the more serious complaints of a hospitalized population.

Table 1

Summary Analysis of Client Expectancy Studies

| Characteristics of Studies | Number of Studies | Total df | Weighted Mean r[a] | Weighted Mean Z[b] |
|---|---|---|---|---|
| All Studies | 15 | 710 | .13 | 2.99* |
| Outpatient | 12 | 359 | .25 | 4.20* |
| Inpatient | 3 | 351 | .02 | .89 |
| Over-Time Analysis | 14 | 699 | .13 | 2.96* |
| Separate Source of Outcome Measure | 7 | 436 | .08 | 1.47 |
| Over-Time Analysis & Separate Source of Outcome Measure | 6 | 425 | .08 | 1.42 |

[a]The correlation estimated from each study was transformed to Fisher's z and weighted by the inverse of the sampling variance (df - 1). The sum of these values was then divided by the sum of the weights, and the resulting mean was converted back to a correlation coefficient (see McNemar, 1962, p. 140).

Since several of the effect size estimates are not true Pearson correlations, the mean value cannot be directly tested for statistical significance. However, the square of this value does provide a rough indication of the proportion of explained variance.

[b]The probability level for each study was transformed to the corresponding standard normal deviate and weighted by df; the sum of these weighted Zs was then divided by the square root of the sum of the squared weights. The resulting value is a standard normal deviate from which an overall probability level may be obtained (Mosteller & Bush, 1954, pp. 328-331; Rosenthal, 1978).

*$p < .005$.

Before speculating further, though, one needs to consider methodological aspects of the studies. Results for the over-time research, where expectancy was assessed prior to the measurement of outcome, yield exactly the same average effect size as that found with all the studies, suggesting that temporal design is not a modulating factor. However, for studies in which the client was not the source of the outcome measure, the overall effect size is greatly reduced. For the most methodologically sophisticated studies, having both an over-time design and a separate source of outcome, the reported results also fail to reach an overall level of statistical significance. These findings provide quantitative support for Wilkins' (1973a, 1973b) contention that significant correlations between client expectancy and outcome only arise in studies where the outcome measures are derived from the client. Despite the large number of degrees of freedom available in the present analysis, there is no significant correlation when the source of outcome is independent of the client.

Of course, such conclusions only apply to the linear correlation between client expectancy and outcome; some may wish to argue that the relationship between these two variables is actually curvilinear. For example, Goldstein (1962, chap.2; 1966) maintains that clients with moderate levels of expectancy should show the greatest amount of change during therapy. The early and often-cited study by Goldstein and Shipman (1961) reports just such a nonlinear relationship. However,

subsequent researchers (e.g., Holstein, 1971; Friedman, 1963; Poey, 1972; Richert, 1976; Uhlenhuth & Duncan, 1968) have repeatedly failed to replicate this finding of curvilinearity.

Table 2 presents the corresponding quantitative review for the therapist expectancy research. The first row of this table indicates that the overall effect size is once again significant and somewhat larger than the comparable finding in the client expectancy analysis. However, in contrast to the client results, the findings concerning therapist expectancy do not vary substatially across the different types of studies. For example, the average correlational effect size for outpatient studies is nearly identical to that found for inpatient studies. Moreover, the estimated effect size is not greatly reduced when one looks at only the over-time studies or the studies with a separate source of outcome. The most reliable estimate, using studies having both an over-time analysis and a separate source of outcome, suggests a significant effect of .17, a correlation that might be considered somewhere between a "small" and a "medium" effect size in the social sciences (Cohen, 1969, chap. 3). Thus, unlike the results with client expectancies, the correlation between therapist expectancy and outcome cannot legitimately be dismissed as a methodological artifact.

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Insert Table 2

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Table 2

Summary Analysis of Therapist Expectancy Studies

| Characteristics of Studies | Number of Studies | Total *df* | Weighted Mean *r*[a] | Weighted Mean *Z*[b] |
|---|---|---|---|---|
| All Studies | 12 | 981 | .25 | 7.32* |
| Outpatient | 8 | 631 | .25 | 6.05* |
| Inpatient | 4 | 350 | .23 | 4.13* |
| Over-Time Analysis | 9 | 600 | .21 | 4.77* |
| Separate Source of Outcome Measure | 9 | 578 | .19 | 4.31* |
| Over-Time Analysis & Separate Source of Outcome Measure | 8 | 480 | .17 | 3.26* |

[a]The correlation estimated from each study was transformed to Fisher's *z* and weighted by the inverse of the sampling variance (df - 1). The sum of these values was then divided by the sum of the weights, and the resulting mean was converted back to a correlation coefficient (see McNemar, 1962, p. 140).

Since several of the effect size estimates are not true Pearson correlations, the mean value cannot be directly tested for statistical significance. However, the square of this value does provide a rough indication of the proportion of explained variance.

[b]The probability level for each study was transformed to the corresponding standard normal deviate and weighted by *df*; the sum of these weighted *Z*s was then divided by the square root of the sum of the squared weights. The resulting value is a standard normal deviate from which an overall probability level may be obtained (Mosteller & Bush, 1954, pp. 328-331; Rosenthal, 1978).

*$p < .005$.

A final contrast between the findings of client and therapist expectancy becomes apparent when one considers the effect of treatment duration. To examine this issue the average length of treatment for each study was correlated with the effect size derived from the study. This procedure reveals that correlations between therapist expectancy and outcome are more robust in studies involving longer periods of treatment, $r(10) = .55$, $p = .06$; however, for client expectancy the correlations with outcome appear unrelated to the length of treatment, $r(13) = -.11$, $p = .7$.

The results of these analyses, then, seem relatively straightforward. Across all studies both client and therapist expectancies appear to be related to treatment outcome. When one examines only the better-designed investigations, though, a differential pattern emerges: Client expectancy no longer demonstrates a systematic correlation with treatment outcome, whereas therapist expectancy retains a reliable, if modest, relationship with the success of therapy. Furthermore, although treatment duration increases the impact of therapist expectancies, it seems to have no significant effect on the relationships between client expectancies an outcome. Such findings suggest that additional studies on expectancies should focus more on the perceptions of the therapist than those of the client. Of course, whether the present evidence concerning therapist expectancies is indicative of a self-fulfilling prophecy or simply a demonstration of prognostic accuracy remains for future research to decide.

## Reference Note

1. Glass, G. V. Primary, secondary, and meta-analysis of research. Paper presented at the meeting of the American Educational Research Association, San Francisco, April 1976.

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